

ABSTRACT

A satellite signal distribution system distributes signal blocks of two different received frequencies and polarities simultaneously over the same cable. The satellite system includes a satellite dish or antenna that receives signals. These received signals are transmitted to a block frequency converter that enables the different frequency polarity blocks to be distributed simultaneously via a single cable. The cable is coupled to a head-out receiver processor which distributes the signals to satellite receivers. The receivers are connected to TVs or other sources. This unique design and configuration provides for a system that will permit satellite broadcast signal distribution to high-rise buildings, hospitals, condominiums, schools, and the like.

IN THE CLAIMS

Please substitute the following amended claims for corresponding claims previously presented. A copy of the amended claims showing current revisions is attached (see also marked on substitute specification).

1. A satellite broadcasting system comprising:

a satellite dish antenna receiving vertical and horizontal polarization signal blocks from at least one satellite;

a block frequency converter coupled to receive the received signal blocks, the block frequency converter frequency-converting the vertical polarization and horizontal polarization signal blocks received from said satellite to different frequency blocks; and

an amplifier arrangement coupled to said block frequency converter, said amplifier arrangement amplifying said converted signal blocks and applying said signal blocks simultaneously to a single coaxial cable for enabling said two different blocks to be distributed simultaneously via said single coaxial cable.

2. A satellite broadcasting system as in claim 1 further comprising a satellite receiver coupled to the cable.

3. A satellite broadcasting system as in claim 2 further including a power source coupled to said block frequency converter.

4. A satellite broadcasting system as in claim 2 wherein said block frequency converter provides for said signals to be converted separately and independently by said satellite receiver.

5. A satellite broadcasting system as in claim 2 wherein said block frequency converter allows said signals to be selectively converted to said satellite receiver.

6. A satellite broadcasting system as in claim 5 further including a switch for selecting between said blocks to be selectively converted by said satellite receiver.

7. A satellite broadcasting system as in claim 4 wherein said block frequency converter includes a first converting means for converting said signals of a first polarization direction to a desired first frequency block and a second

converting means for converting said signals of a second polarization direction to a desired second frequency block.

8. A satellite broadcasting system as in claim 7 wherein said first converting means includes a first down converter which is coupled to an amplifier and said second converting means includes an up converted coupled to a second down converter and a joining means is coupled to said amplifier and said second down converting means.

9. A satellite broadcasting system as in claim 8 wherein said joining means includes a four way splitter.

10. A satellite broadcasting system as in claim 9 wherein a phase lock loop is coupled to said four way splitter.

11. A satellite broadcasting system as in claim 4 further including a splitter to split and divide said signals from said single coaxial cable to enable said signals to be transmitted to a first converting means for converting said signals of a first polarization direction to a desired first frequency for said satellite receiver and a second converting means for converting said signals of a second polarization direction to a desired second frequency for said satellite receiver.

12. A satellite broadcasting system as in claim 11 wherein said first converting means includes a first up converter which is coupled to said splitter and a first down converter is coupled to said first up converter, said first down converter being coupled to said satellite receiver via a first signal line, said second converting

means including a second up converter coupled to said splitter, and said second up converter is coupled to said satellite receiver via a second conduit.

13. A satellite broadcasting system as in claim 12 wherein said splitter includes a four way splitter.

14. A satellite broadcasting system as in claim 13 wherein a phase lock loop is coupled said four way splitter.

15. A satellite broadcasting system as in claim 6 further including a splitter to split and divide said signals from said single coaxial cable to enable said signal to be transmitted to a first block converting means for converting said signals of a first polarization direction to a desired first frequency block for said satellite receiver and a second block converting means for converting said signals of a second polarization direction to a desired second frequency block for said satellite receiver.

16. A satellite broadcasting system as in claim 15 wherein said first converting means includes a first up converter which is coupled to said splitter and said first up converter is coupled to a first down converter, said first down converter is coupled to a joining means, said second converting means includes a second up converter coupled to said splitter, and said second up converter is coupled to said joining means, a switch is coupled to said first down converter and said second up converter, and said switch is coupled to said satellite receiver.

17. A satellite broadcasting system as in claim 16 wherein said splitter and said joining means each include a four way splitter, and a phase lock loop is coupled to said splitter.

18. A satellite broadcasting system as in claim 8 further including a splitter to split and divide said signals from said single coaxial cable to enable said signal to be transmitted to a third converting means for converting said signals of said first polarization direction and a fourth converting means for converting said signals of said second polarization direction.

19. A satellite broadcasting system as in claim 18 wherein said third converting means includes a second up converter which is coupled to said splitter and said second up converter is coupled to a third down converter, said third down converter is coupled to said satellite receiver via a first line, said fourth converting system includes a third up converter coupled to said splitter, and said third up converter is coupled to said satellite receiver via a second line.

20. A satellite broadcasting system as in claim 8 wherein said frequency block converter includes a splitter to split and divide said signals from said single coaxial to enable said signals to be transmitted to a third converting means for converting said signals of said first direction to a desired first frequency block for said satellite receiver and a fourth converting means for converting said signals of said second polarization direction to a desired second frequency block for said satellite receiver.

21. A satellite broadcasting system as in claim 20 wherein said third converting means includes a second up converter which is coupled to said splitter and said second up converter is coupled to a third down converter, said third down converter is coupled to a second joining means, said fourth converting means includes a third up converter coupled to said splitter, and said third up converter is coupled to said second joining means, a switch is coupled to said third down converter and said third up converter, and said switch is further coupled to a line which is coupled to said satellite receiver, and said second joining means is coupled to said line.

Please add the following new claims:

22. A satellite signal distribution system that distributes at least one vertical polarization type block of received satellite signals and at least one horizontal polarization type block of received satellite signals over the same distribution cable to remotely located satellite receivers, said distribution system comprising:

a block converter connected to frequency-convert to a different frequency block, at least one of (a) said vertical polarization type block of received satellite signals and (b) said horizontal polarization type block of received satellite signals, said block converter having an output;

at least one amplifier arrangement coupled to the block converter output, said amplifier arrangement amplifying said frequency-converted block(s); and

a coupling arrangement that couples said vertical polarization type block of received satellite signals and said horizontal polarization type block of received satellite

signals as block frequency converted and amplified by said block converter and said amplifier, such that said vertical polarization type block of satellite signals and said horizontal polarization type block of satellite signals are carried simultaneously by said distribution cable to said plural remotely located satellite receivers.

23. The system of claim 22 wherein each of said satellite receivers are coupled to said distribution cable, said satellite receivers, in use, each independently selecting a desired satellite signal within either said vertical polarization type block of satellite signals and said horizontal polarization type block of satellite signals carried by said distribution cable.

24. The system of claim 22 wherein said block converter frequency-converts both said vertical polarization type block of received satellite signals and said horizontal polarization type block of received satellite signals.

25. The system of claim 22 wherein said block converter comprises a down converter.

26. The system of claim 22 wherein said block converter includes an up converter connected to a down converter.

27. The system of claim 22 wherein said block converter includes a phase locked loop.

28. The system of claim 22 further including a satellite antenna.

29. The system of claim 28 further including a low noise block converter connected between said satellite antenna and said block converter.

30. The system of claim 22 further including an AC power separator.

31. The system of claim 22 further including a splitter.
32. The system of claim 22 wherein said distribution cable comprises a coaxial cable.
33. The system of claim 22 wherein said amplifier arrangement amplifies so as not to create second harmonics.
34. The system of claim 22 wherein said block converter converts transponders of said received satellite signals up to a specified frequency.
35. The system of claim 34 wherein said block converter converts signals to a higher frequency block and then to a lower frequency block to avoid any hidden or forbidden conversion areas.